



Accuris has added the following environmental document to the active parts as mentioned in the document from Royal Electronic Fty Co Ltd as of 11-July-2024.

Thank You.



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## **Environment Hazardous Substances Compliance**

**Royal Electronic Factory (Thailand) Co., Ltd.** hereby certifies compliance to below mentioned directives & ban the usage of below environmental hazardous substances:

1. RoHS Directive (2011/65/EU) (including RoHS 2015/863)
2. PFOA/PFOS Directive (2006/122/EC)
3. REACH Directive (EC/2006/1907) (including not contains 241 candidates of sVHCs)
4. Packaging Waste Directive (94/62/EC, 2004/12/EC)
5. Halogen free (IEC 61249-2-21)
6. Chlorinated organic compounds
7. Brominated organic compounds
8. Organic tin compounds
9. Asbestos
10. Azo compounds
11. Arsenic compounds
12. Beryllium compounds
13. Benzotriazole
14. Formaldehyde
15. Substances depleting the ozone layer
16. Dimethylfumarate (DMF)
17. Phthalates
18. Cobalt dichloride
19. Hexabromocyclododecane (HBCDD)
20. Radioactive Substance
21. Gallium arsenide Directive (67/548/EEC)
22. Polycyclic Aromatic Hydrocarbons (PAHs) (restricted by entry 50 of Annex XVII to REACH Regulation (EC) No 1907/2006, paragraphs 5 and 6.)

The identified hazardous substances are not used in our products, manufacturing process and packaging materials.

| 1. RoHS directive 2011/65/EU: Substance List                |  |                             |             |
|---|--|-----------------------------|-------------|
| No.   | Substance Name   | CAS Number                  | Limit (ppm) |
| 1   | Cadmium and cadmium compounds  | 7440-43-9                   | ≤ 100       |
| 2   | Lead and lead compounds  | 7439-92-1                   | ≤ 1,000     |
| 3   | Mercury and mercury compounds  | 7439-97-6                   | ≤ 1,000     |
| 4   | Hexavalent chromium compounds  | 1333-82-0                   | ≤ 1,000     |
| 5   | Polybrominated biphenyls (PBBs)  | -                           | ≤ 1,000     |
| 6   | Polybrominated diphenylethers (PBDEs)<br>(including decabromodiphenyl ether)                           | -                           | ≤ 1,000     |
| 7   | Bis(2-Ethylhexyl) phthalate (DEHP)   | 117-81-7                    | ≤ 1,000     |
| 8   | Benzyl butyl phthalate (BBP)   | 85-68-7                     | ≤ 1,000     |
| 9   | Dibutyl phthalate (DBP)  | 84-74-2                     | ≤ 1,000     |
| 10  | Diisobutyl phthalate (DIBP)  | 84-69-5                     | ≤ 1,000     |
| 2. PFOA/PFOS directive 2006/122/EC                          |  |                             |             |
| No.   | Substance Name   | CAS Number                  | Limit (ppm) |
| 1   | Perfluorooctane sulfonate (in semi-article or article or part)   | -                           | ≤ 1,000     |
| 2   | Perfluorooctanoic acid (PFOA)  | 335-67-1                    | ≤ 1,000     |
| 3. REACH directive (EC/2006/1907) (241 candidates of sVHCs) |  |                             |             |
| No.   | Substance Name   | CAS Number                  | Limit (ppm) |
| 1   | Anthracene   | 120-12-7                    | ≤ 1,000     |
| 2   | 4,4'- Diaminodiphenylmethane   | 101-77-9                    | ≤ 1,000     |
| 3   | Dibutyl phthalate (DBP)  | 84-74-2                     | ≤ 1,000     |
| 4   | Cobalt dichloride  | 7646-79-9                   | Banned      |
| 5   | Diarsenic pentaoxide   | 1303-28-2                   | ≤ 1,000     |
| 6   | Diarsenic trioxide   | 1327-53-3                   | ≤ 1,000     |
| 7   | Sodium dichromate, dihydrate   | 7789-12-0,<br>10588-01-9    | ≤ 1,000     |
| 8   | 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)   | 81-15-2                     | ≤ 1,000     |
| 9   | Bis (2-ethyl(hexyl)phthalate) (DEHP)   | 117-81-7                    | ≤ 1,000     |
| 10  | Bis(tributyltin) oxide (TBTO)  | 56-35-9                     | ≤ 1,000     |
| 11  | Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (a - HBCDD, b-HBCDD, γ-HBCDD) | 25637-99-4 and<br>3194-55-6 | ≤ 100       |
| 12  | Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)  | 85535-84-8                  | ≤ 1,000     |
| 13  | Lead hydrogen arsenate   | 7784-40-9                   | ≤ 1,000     |
| 14  | Benzyl butyl phthalate (BBP)   | 85-68-7                     | ≤ 1,000     |
| 15  | Triethyl arsenate  | 15606-95-8                  | ≤ 1,000     |
| 16  | Anthracene oil   | 90640-80-5                  | ≤ 1,000     |
| 17  | Anthracene oil, anthracene paste, distn. Lights  | 91995-17-4                  | ≤ 1,000     |
| 18  | Anthracene oil, anthracene paste, anthracene fraction  | 91995-15-2                  | ≤ 1,000     |
| 19  | Anthracene oil, anthracene-low   | 90640-82-7                  | ≤ 1,000     |
| 20  | Anthracene oil, anthracene paste   | 90640-81-6                  | ≤ 1,000     |



|    |   |  |         |
|----|---|--|---------|
| 21 | Diisobutyl phthalate (DIBP)   | 84-69-5                                | ≤ 1,000 |
| 22 | 2,4-Dinitrotoluene  | 121-14-2                               | ≤ 1,000 |
| 23 | Coal tar pitch, high temperature  | 65996-93-2                             | ≤ 1,000 |
| 24 | Tris(2-chloroethyl)phosphate (TCEP)                                     | 115-96-8                               | ≤ 1,000 |
| 25 | Lead sulfochromate yellow (C.I. Pigment Yellow 34)                      | 1344-37-2                              | ≤ 1,000 |
| 26 | Lead chromate molybdate sulfate red (C.I. Pigment Red 104)              | 12656-85-8                             | ≤ 1,000 |
| 27 | Lead chromate   | 7758-97-6                              | ≤ 1,000 |
| 28 | Acrylamide  | 79-06-1                                | ≤ 1,000 |
| 29 | Trichloroethylene   | 79-01-6                                | ≤ 1,000 |
| 30 | Boric acid  | 10043-35-3,<br>11113-50-1              | ≤ 1,000 |
| 31 | Disodium tetraborate, anhydrous   | 1330-43-4,<br>12179-04-3,<br>1303-96-4 | ≤ 1,000 |
| 32 | Tetraboron disodium heptaoxide, hydrate                                 | 12267-73-1                             | ≤ 1,000 |
| 33 | Sodium chromate   | 7775-11-3                              | ≤ 1,000 |
| 34 | Potassium chromate  | 7789-00-6                              | ≤ 1,000 |
| 35 | Ammonium dichromate   | 7789-09-5                              | ≤ 1,000 |
| 36 | Potassium dichromate  | 7778-50-9                              | ≤ 1,000 |
| 37 | Cobalt(II) sulfate  | 10124-43-3                             | ≤ 1,000 |
| 38 | Cobalt(II) dinitrate  | 10141-05-6                             | ≤ 1,000 |
| 39 | Cobalt(II) carbonate  | 513-79-1                               | ≤ 1,000 |
| 40 | Cobalt(II) diacetate  | 71-48-7                                | ≤ 1,000 |
| 41 | 2-Methoxyethanol  | 109-86-4                               | ≤ 1,000 |
| 42 | 2-Ethoxyethanol   | 110-80-5                               | ≤ 1,000 |
| 43 | Chromium trioxide   | 1333-82-0                              | ≤ 1,000 |
| 44 | Acids generated from chromium trioxide and their oligomers              | 7738-94-5<br>13530-68-2                | ≤ 1,000 |
| 45 | 2-Ethoxyethyl acetate   | 111-15-9                               | ≤ 1,000 |
| 46 | Strontium chromate  | 7789-06-2                              | ≤ 1,000 |
| 47 | 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters | 68515-42-4                             | ≤ 1,000 |
| 48 | Hydrazine   | 302-01-2,<br>7803-57-8                 | ≤ 1,000 |
| 49 | 1-Methyl-2-pyrrolidone  | 872-50-4                               | ≤ 1,000 |
| 50 | 1,2,3-Trichloropropane  | 96-18-4                                | ≤ 1,000 |
| 51 | 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich    | 71888-89-6                             | ≤ 1,000 |
| 52 | Lead styphnate  | 15245-44-0                             | ≤ 1,000 |
| 53 | Lead diazide, Lead azide  | 13424-46-9                             | ≤ 1,000 |
| 54 | Lead dipicrate  | 6477-64-1                              | ≤ 1,000 |
| 55 | Phenolphthalein   | 77-09-8                                | ≤ 1,000 |



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| 56 | 2,2'-Dichloro-4,4'-methylenedianiline   | 101-14-4   | ≤ 1,000 |
| 57 | N,N-dimethylacetamide   | 127-19-5   | ≤ 1,000 |
| 58 | Trilead diarsenate  | 3687-31-8  | ≤ 1,000 |
| 59 | Calcium arsenate  | 7778-44-1  | ≤ 1,000 |
| 60 | Arsenic acid  | 7778-39-4  | ≤ 1,000 |
| 61 | Bis(2-methoxyethyl) ether   | 111-96-6   | ≤ 1,000 |
| 62 | 1,2-Dichloroethane  | 107-06-2   | ≤ 1,000 |
| 63 | 4-(1,1,3,3-Tetramethylbutyl)phenol; 4-tert-octyl phenol   | 140-66-9   | ≤ 1,000 |
| 64 | 2-Methoxyaniline; o-Anisidine   | 90-04-0    | ≤ 1,000 |
| 65 | Bis(2-methoxyethyl) phthalate   | 117-82-8   | ≤ 1,000 |
| 66 | Formaldehyde  | 25214-70-4 | ≤ 1,000 |
| 67 | Zirconia Aluminosilicate Refractory Ceramic Fibres  | -          | ≤ 1,000 |
| 68 | Aluminosilicate Refractory Ceramic Fibres   | -          | ≤ 1,000 |
| 69 | Pentazinc chromate octahydroxide  | 49663-84-5 | ≤ 1,000 |
| 70 | Potassium hydroxyoctaoxodizincatedichromate   | 11103-86-9 | ≤ 1,000 |
| 71 | Dichromium tris(chromate)   | 24613-89-6 | ≤ 1,000 |
| 72 | 1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)   | 112-49-2   | ≤ 1,000 |
| 73 | 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)   | 110-71-4   | ≤ 1,000 |
| 74 | Diboron trioxide  | 1303-86-2  | ≤ 1,000 |
| 75 | Formamide   | 75-12-7    | ≤ 1,000 |
| 76 | Lead(II) bis(methanesulfonate)  | 17570-76-2 | ≤ 1,000 |
| 77 | 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (TGIC)   | 2451-62-9  | ≤ 1,000 |
| 78 | 1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)                             | 59653-74-6 | ≤ 1,000 |
| 79 | 4,4'-bis(dimethylamino)benzophenone (Michler's ketone)  | 90-94-8    | ≤ 1,000 |
| 80 | N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)  | 101-61-1   | ≤ 1,000 |
| 81 | 4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride | 2580-56-5  | ≤ 1,000 |
| 82 | [4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride                  | 548-62-9   | ≤ 1,000 |
| 83 | 4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol   | 561-41-1   | ≤ 1,000 |
| 84 | α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)                         | 6786-83-0  | ≤ 1,000 |
| 85 | Bis(pentabromophenyl) ether   | 1163-19-5  | ≤ 1,000 |
| 86 | Pentacosfluorotridecanoic acid  | 72629-94-8 | ≤ 1,000 |
| 87 | Tricosfluorododecanoic acid   | 307-55-1   | ≤ 1,000 |
| 88 | Henicosfluoroundecanoic acid  | 2058-94-8  | ≤ 1,000 |
| 89 | Heptacosfluorotetradecanoic acid  | 376-06-7   | ≤ 1,000 |
| 90 | 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated   | -          | ≤ 1,000 |



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| 91  | 4-Nonylphenol, branched and linear - substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof | -   | ≤ 1,000 |
| 92  | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))  | 123-77-3  | ≤ 1,000 |
| 93  | Hexahydro-2-benzofuran-1,3-dione (HHPA), cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride  | 85-42-7,<br>13149-00-3,<br>14166-21-3                   | ≤ 1,000 |
| 94  | Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride  | 25550-51-0,<br>19438-60-9,<br>48122-14-1,<br>57110-29-9 | ≤ 1,000 |
| 95  | Methoxy acetic acid  | 625-45-6  | ≤ 1,000 |
| 96  | 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear   | 84777-06-0  | ≤ 1,000 |
| 97  | Diisopentylphthalate   | 605-50-5  | ≤ 1,000 |
| 98  | N-pentyl-isopentylphthalate  | 776297-69-9   | ≤ 1,000 |
| 99  | 1,2-Diethoxyethane   | 629-14-1  | ≤ 1,000 |
| 100 | N,N-dimethylformamide; dimethyl formamide  | 68-12-2   | ≤ 1,000 |
| 101 | Dibutyltin dichloride (DBT)  | 683-18-1  | ≤ 1,000 |
| 102 | Acetic acid, lead salt, basic  | 51404-69-4  | ≤ 1,000 |
| 103 | Trilead bis(carbonate)dihydroxide (basic lead carbonate)   | 1319-46-6   | ≤ 1,000 |
| 104 | Lead oxide sulfate   | 12036-76-9  | ≤ 1,000 |
| 105 | [Phthalato(2-)]dioxotrilead  | 69011-06-9  | ≤ 1,000 |
| 106 | Dioxobis(stearato)trilead  | 12578-12-0  | ≤ 1,000 |
| 107 | Fatty acids, C16-18, lead salts  | 91031-62-8  | ≤ 1,000 |
| 108 | Lead bis(tetrafluoroborate)  | 13814-96-5  | ≤ 1,000 |
| 109 | Lead cyanamidate   | 20837-86-9  | ≤ 1,000 |
| 110 | Lead dinitrate   | 10099-74-8  | ≤ 1,000 |
| 111 | Lead oxide (lead monoxide)   | 1317-36-8   | ≤ 1,000 |
| 112 | Lead tetroxide (orange lead)   | 1314-41-6   | ≤ 1,000 |
| 113 | Lead titanium trioxide   | 12060-00-3  | ≤ 1,000 |
| 114 | Lead Titanium Zirconium Oxide  | 12626-81-2  | ≤ 1,000 |
| 115 | Pentalead tetraoxide sulphate  | 12065-90-6  | ≤ 1,000 |
| 116 | Pyrochlore, antimony lead yellow   | 8012-00-8   | ≤ 1,000 |
| 117 | Silicic acid, barium salt, lead-doped  | 68784-75-8  | ≤ 1,000 |
| 118 | Silicic acid, lead salt  | 11120-22-2  | ≤ 1,000 |
| 119 | Sulfurous acid, lead salt, dibasic   | 62229-08-7  | ≤ 1,000 |
| 120 | Tetraethyllead   | 78-00-2   | ≤ 1,000 |



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| 121 | Tetralead trioxide sulphate   | 12202-17-4  | ≤ 1,000 |
| 122 | Trilead dioxide phosphonate   | 12141-20-7  | ≤ 1,000 |
| 123 | Furan   | 110-00-9    | ≤ 1,000 |
| 124 | Propylene oxide; 1,2-epoxypropane; methyloxirane  | 75-56-9     | ≤ 1,000 |
| 125 | Diethyl sulphate  | 64-67-5     | ≤ 1,000 |
| 126 | Dimethyl sulphate   | 77-78-1     | ≤ 1,000 |
| 127 | 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine  | 143860-04-2 | ≤ 1,000 |
| 128 | Dinoseb   | 88-85-7     | ≤ 1,000 |
| 129 | 4,4'-methylenedi-o-toluidine  | 838-88-0    | ≤ 1,000 |
| 130 | 4,4'-oxydianiline and its salts   | 101-80-4    | ≤ 1,000 |
| 131 | 4-Aminoazobenzene; 4-Phenylazoaniline   | 60-09-3     | ≤ 1,000 |
| 132 | 4-methyl-m-phenylenediamine (2,4-toluene-diamine)   | 95-80-7     | ≤ 1,000 |
| 133 | 6-methoxy-m-toluidine (p-cresidine)   | 120-71-8    | ≤ 1,000 |
| 134 | Biphenyl-4-ylamine  | 92-67-1     | ≤ 1,000 |
| 135 | o-aminoazotoluene   | 97-56-3     | ≤ 1,000 |
| 136 | o-Toluidine; 2-Aminotoluene   | 95-53-4     | ≤ 1,000 |
| 137 | N-methylacetamide   | 79-16-3     | ≤ 1,000 |
| 138 | 1-bromopropane  | 106-94-5    | ≤ 1,000 |
| 139 | Cadmium   | 7440-43-9   | ≤ 1,000 |
| 140 | Ammonium pentadecafluorooctanoate (APFO)  | 3825-26-1   | ≤ 1,000 |
| 141 | Pentadecafluorooctanoic acid (PFOA)   | 335-67-1    | ≤ 1,000 |
| 142 | Dipentyl phthalate (DPP)  | 131-18-0    | ≤ 1,000 |
| 143 | 4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof] |             | ≤ 1,000 |
| 144 | Cadmium oxide   | 1306-19-0   | ≤ 1,000 |
| 145 | Cadmium sulphide  | 1306-23-6   | ≤ 1,000 |
| 146 | Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)  | 573-58-0    | ≤ 1,000 |
| 147 | Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)  | 1937-37-7   | ≤ 1,000 |
| 148 | Dihexyl phthalate   | 84-75-3     | ≤ 1,000 |
| 149 | Imidazolidine-2-thione (2-imidazoline-2-thiol)  | 96-45-7     | ≤ 1,000 |
| 150 | Lead di(acetate)  | 301-04-2    | ≤ 1,000 |
| 151 | Trixylyl phosphate  | 25155-23-1  | ≤ 1,000 |
| 152 | Cadmium chloride  | 10108-64-2  | ≤ 1,000 |
| 153 | Sodium peroxometaborate   | 7632-04-4   | ≤ 1,000 |
| 154 | 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear  | 68515-50-4  | ≤ 1,000 |



|     |   |                                       |         |
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| 155 | Sodium perborate; perboric acid, sodium salt  | -                                     | ≤ 1,000 |
| 156 | 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)  | 25973-55-1                            | ≤ 1,000 |
| 157 | Cadmium sulphate  | 10124-36-4,<br>31119-53-6             | ≤ 1,000 |
| 158 | 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)  | 3846-71-7                             | Banned  |
| 159 | 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)  | 15571-58-1                            | ≤ 1,000 |
| 160 | reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)                                      | -                                     | ≤ 1,000 |
| 161 | Cadmium fluoride  | 7790-79-6                             | ≤ 1,000 |
| 162 | 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]   | -                                     | ≤ 1,000 |
| 163 | 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate  | 68515-51-5,<br>68648-93-1             | ≤ 1,000 |
| 164 | Perfluorononan-1-oic-acid and its sodium and ammonium salts Perfluorononan-1-oic-acid   | 375-95-1,<br>21049-39-8,<br>4149-60-4 | ≤ 1,000 |
| 165 | Nitrobenzene  | 98-95-3                               | ≤ 1,000 |
| 166 | 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)  | 36437-37-3                            | ≤ 1,000 |
| 167 | 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)  | 3864-99-1                             | ≤ 1,000 |
| 168 | 1,3-propanesultone  | 1120-71-4                             | ≤ 1,000 |
| 169 | Benzo[def]chrysene(Benzo[a]pyrene)  | 50-32-8                               | Banned  |
| 170 | 4,4'-isopropylidenediphenol (bisphenol A; BPA)  | 80-05-7                               | ≤ 1,000 |
| 171 | Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts  | 335-76-2,<br>3830-45-3,<br>3108-42-7  | ≤ 1,000 |
| 172 | p-(1,1-dimethylpropyl)phenol  | 80-46-6                               | ≤ 1,000 |
| 173 | 4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof] | -                                     | ≤ 1,000 |
| 174 | Perfluorohexane-1-sulphonic acid and its salts  | -                                     | ≤ 1,000 |
| 175 | Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP)   | -                                     | ≤ 1,000 |
| 176 | Chrysene  | 218-01-9,<br>1719-03-5                | Banned  |
| 177 | Cadmium nitrate   | 10022-68-1,<br>10325-94-7             | ≤ 1,000 |
| 178 | Cadmium hydroxide   | 21041-95-2                            | ≤ 1,000 |
| 179 | Cadmium carbonate   | 513-78-0                              | ≤ 1,000 |



|     |  |                    |         |
|-----|--|--------------------|---------|
| 180 | Benz[a]anthracene  | 56-55-3, 1718-53-2 | Banned  |
| 181 | 1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™)                                       | -                  | ≤ 1,000 |
| 182 | Octamethylcyclotetrasiloxane   | 556-67-2           | ≤ 1,000 |
| 183 | Decamethylcyclopentasiloxane   | 541-02-6           | ≤ 1,000 |
| 184 | Dodecamethylcyclohexasiloxane  | 540-97-6           | ≤ 1,000 |
| 185 | Lead   | 7439-92-1          | ≤ 1,000 |
| 186 | Disodium octaborate  | 12008-41-2         | ≤ 1,000 |
| 187 | Benzo[ghi]perylene   | 191-24-2           | ≤ 1,000 |
| 188 | Terphenyl hydrogenated   | 61788-32-7         | ≤ 1,000 |
| 189 | Ethylenediamine (EDA)  | 107-15-3           | ≤ 1,000 |
| 190 | Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)   | 552-30-7           | ≤ 1,000 |
| 191 | Dicyclohexyl phthalate (DCHP)  | 84-61-7            | ≤ 1,000 |
| 192 | 2,2-bis(4'-hydroxyphenyl)-4-methylpentane  | 6807-17-6          | ≤ 1,000 |
| 193 | Benzo[k]fluoranthene   | 207-08-9           | Banned  |
| 194 | Fluoranthene   | 206-44-0           | ≤ 1,000 |
| 195 | Phenanthrene   | 85-01-8            | ≤ 1,000 |
| 196 | Pyrene   | 129-00-0           | ≤ 1,000 |
| 197 | 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one  | 15087-24-8         | ≤ 1,000 |
| 198 | 2-methoxyethyl acetate   | 110-49-6           | ≤ 1,000 |
| 199 | Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)                                       | -                  | ≤ 1,000 |
| 200 | 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof) | -                  | ≤ 1,000 |
| 201 | 4-tert-butylphenol   | 98-54-4            | ≤ 1,000 |
| 202 | 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone  | 119313-12-1        | ≤ 1,000 |
| 203 | 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one   | 71868-10-5         | ≤ 1,000 |
| 204 | Diisohexyl phthalate   | 71850-09-4         | ≤ 1,000 |
| 205 | Perfluorobutane sulfonic acid (PFBS) and its salts   | -                  | ≤ 1,000 |
| 206 | Dibutylbis(pentane-2,4-dionato-O,O')tin  | 22673-19-4         | ≤ 1,000 |
| 207 | Butyl 4-hydroxybenzoate  | 94-26-8            | ≤ 1,000 |
| 208 | 2-methylimidazole  | 693-98-1           | ≤ 1,000 |
| 209 | 1-vinylimidazole   | 1072-63-5          | ≤ 1,000 |
| 210 | Bis(2-(2-methoxyethoxy)ethyl)ether   | 143-24-8           | ≤ 1,000 |



|     |  |             |         |
|-----|--|-------------|---------|
| 211 | Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety | -           | ≤ 1,000 |
| 212 | 1,4-dioxane  | 123-91-1    | ≤ 1,000 |
| 213 | 2,2-bis(bromomethyl)propane-1,3-diol (BMP); 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA); 2,3-dibromo-1-propanol (2,3-DBPA)                                  | -           | ≤ 1,000 |
| 214 | 2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers   | -           | ≤ 1,000 |
| 215 | 4,4'-(1-methylpropylidene)bisphenol  | 77-40-7     | ≤ 1,000 |
| 216 | glutaral   | 111-30-8    | ≤ 1,000 |
| 217 | Medium-chain chlorinated paraffins (MCCP)  | -           | ≤ 1,000 |
| 218 | orthoboric acid, sodium salt   | -           | ≤ 1,000 |
| 219 | Phenol, alkylation products (mainly in para position) with C12-rich branched alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP)                          | -           | ≤ 1,000 |
| 220 | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol   | 119-47-1    | ≤ 1,000 |
| 221 | tris(2-methoxyethoxy)vinylsilane   | 1067-53-4   | ≤ 1,000 |
| 222 | (±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)   | -           | ≤ 1,000 |
| 223 | S-(tricyclo(5.2.1.0 <sup>2,6</sup> )deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate  | 255881-94-8 | ≤ 1,000 |
| 224 | N-(hydroxymethyl)acrylamide  | 924-42-5    | ≤ 1,000 |
| 225 | 1,1'-[ethane-1,2-diylbis(oxy)]bis[2,4,6-tribromobenzene]   | 37853-59-1  | ≤ 1,000 |
| 226 | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol   | 79-94-7     | ≤ 1,000 |
| 227 | 4,4'-sulphonyldiphenol   | 80-09-1     | ≤ 1,000 |
| 228 | Barium diboron tetraoxide  | 13701-59-2  | ≤ 1,000 |
| 229 | Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof   | -           | ≤ 1,000 |
| 230 | Isobutyl 4-hydroxybenzoate   | 4247-02-3   | ≤ 1,000 |
| 231 | Melamine   | 108-78-1    | ≤ 1,000 |
| 232 | Perfluoroheptanoic acid and its salts  | -           | ≤ 1,000 |
| 233 | reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine  | -           | ≤ 1,000 |
| 234 | Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide  | 75980-60-8  | ≤ 1,000 |
| 235 | Bis(4-chlorophenyl) sulphone   | 80-07-9     | ≤ 1,000 |
| 236 | 2,4,6-tri-tert-butylphenol   | 732-26-3    | ≤ 1,000 |



|  |  |                   |  |
|--|--|-------------------|--|
| 237  | 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol                          | 3147-75-9         | ≤ 1,000  |
| 238  | 2-(dimethylamino)-2-[(4-methylphenyl)methyl]-1-[4-(morpholin-4-yl)phenyl]butan-1-one | 119344-86-4       | ≤ 1,000  |
| 239  | Bumetizole   | 3896-11-5         | ≤ 1,000  |
| 240  | Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol       | -                 | ≤ 1,000  |
| 241  | Bis(α,α-dimethylbenzyl) peroxide   | 80-43-3           | ≤ 1,000  |
| <b>4. Packaging Waste directive (94/62/EC, 2004/12/EC)</b> |  |                   |  |
| <b>No.</b>   | <b>Substance Name</b>  | <b>CAS Number</b> | <b>Limit (ppm)</b>   |
| 1  | Packaging material (Pb+Cd+Hg+Cr <sup>+6</sup> )                                      | -                 | ≤ 80<br>(Cd ≤ 5, Pb ≤ 50)  |
| <b>5. Halogen free (IEC 61249-2-21)</b>                    |  |                   |  |
| <b>No.</b>   | <b>Substance Name</b>  | <b>CAS Number</b> | <b>Limit (ppm)</b>   |
| 1  | Chlorine (Cl)  | 22537-15-1        | ≤ 900  |
| 2  | Bromine (Br)   | 10097-32-2        | ≤ 900  |
| 3  | Chlorine (Cl) + Bromine (Br)   | -                 | ≤ 1,500  |
| <b>6. Chlorinated organic compounds</b>                    |  |                   |  |
| <b>No.</b>   | <b>Substance Name</b>  | <b>CAS Number</b> | <b>Limit (ppm)</b>   |
| 1  | Polychlorinated biphenyls (PCB)  | 1336-36-3         | Banned   |
| 2  | Polychlorinated naphthalenes PCN   | 70776-03-3        | Banned   |
| 3  | Polychlorinated terphenyls (PCT)   | 61788-38-8        | Banned   |
| 4  | Short-chain chlorinated paraffins (SCCP)   | -                 | ≤ 100  |
| 5  | Polyvinyl chloride (PVC) and PVC blends  | 9002-86-2         | Packaging materials, Heat shrink Binding, tube, Wood, Plastic case/cover ≤ 1000ppm |
| 6  | Other chlorinated organic compounds 其他有機氯化化合物  | -                 | ≤ 900  |
| <b>7. Brominated organic compounds</b>                     |  |                   |  |
| <b>No.</b>   | <b>Substance Name</b>  | <b>CAS Number</b> | <b>Limit (ppm)</b>   |
| 1  | Brominated organic compounds   | -                 | ≤ 900  |
| <b>8. Organic tin compounds</b>                            |  |                   |  |
| <b>No.</b>   | <b>Substance Name</b>  | <b>CAS Number</b> | <b>Limit (ppm)</b>   |
| 1  | Trisubstituted organotin compounds (including tributyltin (TBT))                     | -                 | ≤ 1,000  |
| 2  | Dibutyltin (DBT)   | -                 | ≤ 1,000  |
| 3  | Diocetyl tin (COT) compounds   | -                 | ≤ 1,000  |



| 9. Asbestos                              |  |            |             |
|--|--|------------|-------------|
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Asbestos   | 1332-21-4  | Banned      |
| 10. Azo compounds                        |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Specific azo compounds   | -          | ≤ 30        |
| 11. Arsenic compounds                    |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Diarsenic trioxide   | 1327-53-3  | ≤ 1,000     |
| 2  | Diarsenic pentaoxide   | 1303-28-2  | ≤ 1,000     |
| 12. Beryllium compounds                  |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Beryllium oxide  | 1304-56-9  | Banned      |
| 2  | Beryllium copper   | 11108-64-8 | Banned      |
| 13. Benzotriazole                        |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Specific benzotriazole   | 3846-71-7  | Banned      |
| 14. Formaldehyde                         |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Formaldehyde   | 50-00-0    | Banned      |
| 15. Substances depleting the ozone layer |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Ozone depleting substances (ODS)   | -          | Banned      |
| 2  | Hydrofluorocarbon (HFC)  | -          | Banned      |
| 3  | Perfluorocarbon (PFC)  | -          | Banned      |
| 16. Dimethylfumarate (DMF)               |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Dimethylfumarate   | 624-49-7   | ≤ 0.1       |
| 17. Phthalates                           |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Specific phthalates (DEHP, DBP, BBP, DIBP, DINP, DIDP, DNOP, DNHP, DIHP, DMEP) | -          | ≤ 1,000     |
| 18. Cobalt dichloride                    |  |            |             |
| No.                                      | Substance Name   | CAS Number | Limit (ppm) |
| 1  | Cobalt dichloride  | 7646-79-9  | Banned      |



| 19. Hexabromocyclododecane (HBCDD)          |                                |            |             |
|---|--------------------------------|------------|-------------|
| No.   | Substance Name                 | CAS Number | Limit (ppm) |
| 1   | Hexabromocyclododecane         | 25637-99-4 | < 100       |
| 20. Radioactive Substance                   |                                |            |             |
| No.   | Substance Name                 | CAS Number | Limit (ppm) |
| 1   | Radioactive Substance          | -          | Banned      |
| 21. Gallium arsenide                        |                                |            |             |
| No.   | Substance Name                 | CAS Number | Limit (ppm) |
| 1   | Gallium arsenide               | 1303-00-0  | Banned      |
| 22. Polycyclic Aromatic Hydrocarbons (PAHs) |                                |            |             |
| No.   | Substance Name                 | CAS Number | Limit (ppm) |
| 1   | Benzo[a]pyrene (BaP)           | 50-32-8    | Banned      |
| 2   | Benzo[e]pyrene (BeP)           | 192-97-2   | Banned      |
| 3   | Benzo[a]anthracene (BaA)       | 56-55-3    | Banned      |
| 4   | Chrysen (CHR)                  | 218-01-9   | Banned      |
| 5   | Benzo[b]fluoranthene (BbFA)    | 205-99-2   | Banned      |
| 6   | Benzo[j]fluoranthene (BjFA)    | 205-82-3   | Banned      |
| 7   | Benzo[k]fluoranthene (BkFA)    | 207-08-9   | Banned      |
| 8   | Dibenzo[a,h]anthracene (DBaHA) | 53-70-3    | Banned      |

Royal Electronic Factory (Thailand) Co., Ltd. will update developments related to substances per above table.

Company : Royal Electronic Factory (Thailand) Co., Ltd.

Title : Quality Manager

Signed by : Mr. Polthanasan Suppapol

Signature :

Date : July 11<sup>th</sup>, 2024

